

Health service use and self-care by older Australian women with sleeping problems

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the degree of

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under the supervision of:

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Certificate of Original Authorship

Required wording for the certificate of original authorship

CERTIFICATE OF ORIGINAL AUTHORSHIP

I, Sophie Meredith, declare that this thesis, is submitted in fulfilment of the requirements for the award of doctor of philosophy, in the school of Public Health at the University of Technology Sydney.

This thesis is wholly my own work unless otherwise referenced or acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

This document has not been submitted for qualifications at any other academic institution.

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Statement of contributions to jointly authored works contained in the thesis

This body of work is a thesis by compilation. The results from this thesis have been submitted for publication in peer-reviewed journals through four discrete manuscripts, presented in Chapters 4 through 6 and a peer-reviewed critical literature review contained in Chapter 2. I have been predominantly responsible for preparing these manuscripts, for conducting the analysis, and for determining the research questions and direction of the manuscripts. I have been supported in these undertakings by Professor Jon Adams, Dr Jane Frawley and Professor David Sibbritt.

I take responsibility for the accuracy of the findings presented in the publications contained herein and in this thesis.

Published works by the author incorporated into the thesis

Of the drafted manuscripts contained in this thesis, all have been submitted for publication; the first three are published, and the fourth is under review.

Following is the list of manuscripts contained in this thesis:

1. Meredith, S., Frawley, J., Adams, J. and Sibbritt, D., 2018. The utilization of health services and self-care by older women with sleeping problems: Results from a nationally representative sample of

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Abbreviations

ABS – Australian Bureau of Statistics

ADR – adverse drug reaction

AIHW – Australian Institute of Health and Welfare

ALSWH – Australian Longitudinal Study on Women's Health

ARTG – Australian Register of Therapeutic Goods

CAM – complementary and alternative medicine

CBT – cognitive behavioural therapy

CFS – chronic fatigue syndrome

CI – confidence interval

GEE – generalised estimating equations

GP – general practitioner

HDIs – harmful drug interactions

HRQoL – health-related quality of life

HSR – health services research

ID – insomnia disorder

IS – insomnia symptoms

MBM – mind-body medicine

MOS-SS – Medical Outcomes Study Sleep Scale

NRAS – National Registration and Accreditation Scheme

OR – odds ratio

OSA – obstructive sleep apnoea

OSAHS – obstructive sleep apnoea-hypopnea syndrome

OTC – over-the-counter (medications)

PA – physical activity

RCT – randomised controlled trial

RLS – restless legs syndrome

RRMA – Rural, Remote and Metropolitan Areas

SDB – sleep-disordered breathing

SES – socio-economic status

SWD – sleep-wake disturbance

TCM – Traditional Chinese Medicine

TGA – Therapeutic Goods Administration

US – United States

UTS – University of Technology Sydney

WHO – World Health Organization

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Abstract

Objectives: There is very limited research describing the levels or types of health service use or self-care for women sleeping problems and no study to date has provided an overview of the use of all treatment options for sleeping problems among women. The aim of this doctoral study by compilation is, then, to illuminate the prevalence and type of health service use—including complementary and alternative medicine (CAM)—and self-care by older women with sleeping problems. It also aims to investigate the relationship between demographic profile, and characteristics such as age, income, body mass index (BMI) and sleeping problems in older Australian women, and explore the interrelationship between chronic illness and sleeping problems in women.

Method:

This thesis includes two stages of research. The first stage (stage 1, outlined in chapters 4 and 6), utilises data from the Australian Longitudinal Study on Women's Health (ALSWH).

By reporting on the analyses of the most recent survey conducted in 2013, for the mid-age cohort when the women were aged 62–67 years, chapter 4 aims to provide some answers to the four research objectives of this thesis. These objectives are firstly to determine prevalence of health service use—including practitioner-based CAM—by older Australian women with sleeping problems and also to determine the prevalence of self-care practiced by older Australian women with sleeping problems. The chapter also investigates the

characteristics of older women with sleeping problems and the chronic conditions associated with sleeping problems (objectives 3 and 4 of this thesis to be outlined in chapter 1) by comparing the profile of women with sleeping problems to those without. 9,110 participants (99.6%) responded to questions about sleeping problems, health service utilization and self-care (e.g., herbal medicines and vitamins), demographics, and chronic illnesses. All health service and CAM self-care variables were entered into a logistic regression model. Then a backward stepwise elimination process—using all health service and CAM self-care variables—was undertaken to ascertain the likelihood of women with sleeping problems using various health services and self-care products and practices compared to women without sleeping problems.

Chapter 6 was also part of stage 1 of this research which used data from the ALSWH and similarly contributes to the four research objectives. In chapter 6, characteristics of women with sleeping problems are compared with women without sleeping problems longitudinally by again, as with chapter 4, looking at the cohort of women born in 1946–1951. However, this chapter utilises data from four surveys when the women were aged 56–61 years in 2007, Survey 5 (mean age 58.49 years; SD = 1.46); 59–64 years in 2010, Survey 6 (mean age 61.53 years; SD = 1.46); 62–67 years in 2013, Survey 7 (mean age 64.78 years; SD = 1.47); and 65–70 years in 2016, Survey 8 (mean age 67.74 years; SD = 1.46) meaning there is a greater breadth of ages and age groups available for analysis. This chapter is a longitudinal analysis of the utilisation of health services and self-care activities by Australian women with sleeping problems through GEE regression analysis.

Stage 2 of this research (described in chapter 5), analyses data from a sub-study of the 45 and Up Study, the largest ongoing study of healthy ageing in the southern hemisphere. It investigates risk factors for sleeping problems in a cohort of older women aged 50-100. Chapter 5 particularly focuses on answering the research objectives 3 and 4 (as described in the introduction of this thesis). These research objectives focus on the characteristics of women with sleeping problems and chronic conditions for older Australian women. To help reach the research objectives, all variables identified as having a bivariate association ($p < 0.30$) with sleeping problems were entered in to a logistic regression model and a stepwise backward elimination process was then used to find the most significant predictors of sleeping problems.

Results: Around one in every two older women have sleeping problems. Health service use and self-care is increased in women with sleeping problems compared to women without sleeping problems. Specifically, the odds of consulting a general practitioner (GP) once or twice for women with sleeping problems increases by a factor of 1.16, 95% confidence interval (CI) [1.10, 1.24], 1.34, 95% CI [1.26, 1.42] for three–six visits, and 1.58, 95% CI [1.41, 1.78] for more than seven visits compared with women without sleeping problems. Women with sleeping problems were also more likely to use herbal medicines the odds ratio (OR) = 1.13; 95% CI [1.07, 1.30] than women without sleeping problems.

Longitudinal analysis found that sleeping problems were less likely to arise in women aged 62–67 years than when women were aged 56–61 years, (OR = 0.85; 95% CI [0.81, 0.90]). Longitudinal analysis of ALSWH showed women

with sleeping problems were more likely to be sedentary and less likely to engage in low levels of exercise (OR = 0.87; 95% CI [0.81, 0.93]), moderate exercise (OR = 0.85; 95% CI [0.79, 0.91]) or high levels of exercise (OR = 0.82; 95% CI [0.76, 0.88]) than women without sleeping problems ($p < 0.001$).

Sleeping problems are also significantly associated with chronic conditions. Analysis of a sub-study of the 45 and Up Study showed that 43% of women with comorbid chronic conditions reported sleeping problems. Women were more likely to have a sleeping problem if they reported some difficulties with available income (OR = 1.61; 95% CI [1.27, 2.04]; $p < 0.005$), or were struggling with available income (OR = 2.84; 95% CI [2.04, 3.96]; $p < 0.005$). Women were less likely to have sleeping problems if they were highly physically active (OR = 0.63; 95% CI [0.51, 0.79]; $p < 0.005$).

Conclusion: Health service use and self-care is elevated amongst women with sleeping problems in the form of increased GP consultations and herb use. Medical professionals need to enquire about sleeping problems in older women and their self-care—particularly herb use, to safeguard patient-safety and reduce the risk of adverse drug reactions and herb-drug interactions.

